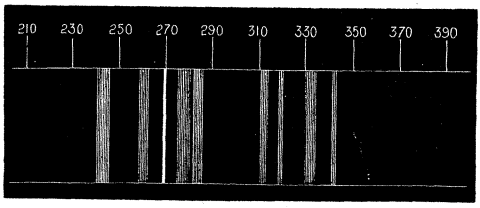
II. "On Radiant Matter Spectroscopy: Note on the Earth Yα." By WILLIAM CROOKES, F.R.S. Received February 18, 1886.

Among the samarskite earths which concentrate towards the middle of the fractionations there is one (or a group) which presents in the radiant matter tube a well marked phosphorescent spectrum differing from those I have already described.

The measurements of the bands and lines are given below:—

Scale of spectroscope.	λ.	$\frac{1}{\lambda^2}$	Remarks.
10·325°	6446	2407	Approximate centre of a red band shaded off on the least refrangible side.
10·310	6415	2430	Somewhat sharp edge of the red band.
10·185	6189	2611	Approximate centre of a very faint orange band.
10·130	6094	2693	A sharp narrow orange-red line.
10·050	5970	2806	Approximate centre of a narrow bright orange band. (Between this line and 2693 is a fainter semi-continuous orange band.)
9·840	5676	3104	Approximate centre of a narrow bright green band.
9·790	5613	3174	Approximate centre of a narrow green band, not quite so bright as 3104.
9·690	5495	3312	Approximate centre of a bright green band, wider than the other three green bands.
9·610	5406	3422	Approximate centre of a narrow bright green band.

The accompanying figure gives the spectrum drawn to the $\frac{1}{\lambda^2}$ scale.



The earth giving the above spectrum, when sufficiently purified, presents all the characteristics of the earth discovered by Marignac, and provisionally called by him Yα.* Through the kindness of M. de

* "Comptes rendus," xc, p. 899.

Marignac I have been enabled to compare a specimen of Yα of his own preparation with the earth described above. The two earths agree in their chemical characteristics, and their phosphorescent spectra are practically identical.

No name has yet been given to this earth, as M. de Marignac appears to be in some doubt whether it is not identical with J. Lawrence Smith's earth mosandra.* A specimen of mosandra prepared by J. Lawrence Smith, and sent me by M. de Marignac, gave a phosphorescent spectrum showing that it was compound, and that yttria was one of its constituents.

March 4, 1886.

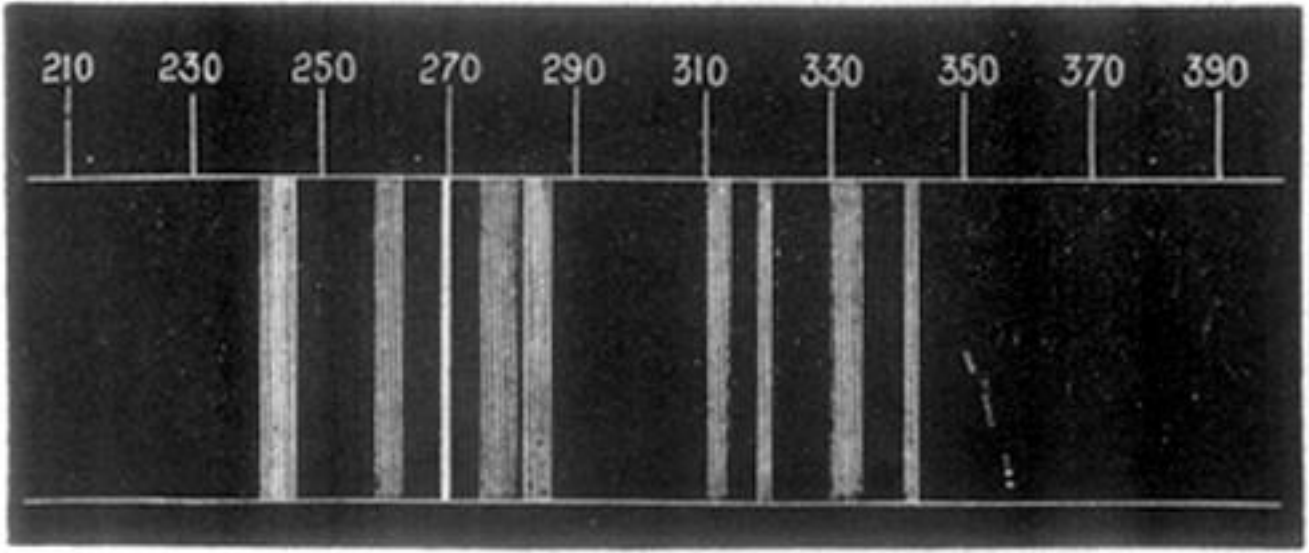
Professor G. G. STOKES, D.C.L., President, in the Chair.

The Presents received were laid on the table and thanks ordered for them.

In pursuance of the Statutes, the names of the Candidates recommended for election into the Society were read from the Chair, as follows:—

Atkinson, Prof. Edmund, Ph.D.
Bidwell, Shelford, M.A.
Bosanquet, Robert Halford Macdowall, M.A.
Boys, Charles Vernon, A.R.S.M.
Buchanan, John Young, M.A.
Burdett, Henry Charles, F.S.S.
Buzzard, Thomas, M.D.
Cameron, Sir Charles Alexander, M.D.
Cash, J. Theodore, M.D.
Claudet, Frederic, F.C.S.
Colenso, William, F.L.S.
Corfield, Prof. William Henry, M.D.
Curtis, Arthur Hill, D.Sc.
Davis, James William, F.G.S.
Denton, John Bailey, M.I.C.E.
Dixon, Harold B., M.A.
Douglass, Sir James Nicholas, M.I.C.E.
Ewart, Professor J. Cossar, M.D.
Ewing, Professor J. A., B.Sc.
Festing, Edward Robert, Major-General, R.E.
Forbes, Professor George, M.A.
Forsyth, Andrew Russell, M.A.
Foster, Professor Balthazar Walter, F.R.C.P.
Galloway, William.
Gowers, William Richard, M.D.
Green, Professor A. H., M.A.
Hinde, George Jennings, Ph.D.
Horsley, Prof. Victor, F.R.C.S.
Latham, Peter Wallwork, M.D.
Lewis, Timothy Richards, M.B., Surgeon-Major, A.M.D.
MacGillivray, Paul Howard, M.A.
Manson, Patrick, M.D.
Meldola, Raphael, F.R.A.S.
Milne, Professor John, F.G.S.
Moxon, Walter, M.D.
Ord, William Miller, M.D.

* "Comptes rendus," lxxxvii, p. 145; lxxxvii, p. 831; lxxxix, p. 480.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